



**FIGURE A-2**  
**COOL UPPER LEVEL LOW TO MOVE OVER REGION-**  
**ACTIVE STORM WEATHER EXPECTED**

Area Forecast Discussion

National Weather Service Phoenix AZ

226 PM MST WED AUG 17 2016

.SYNOPSIS...

Very warm conditions today will gradually trend cooler through the end of the week, but highs should still stay at or above seasonal normals. Modest monsoon moisture levels look to persist through the weekend with good chances of daily high terrain storms and slight chances across the deserts. The main threat with these storms will be gusty downdraft winds and patchy blowing dust over the deserts.

.DISCUSSION...

Very warm temperatures already observed across southeast CA with the latest ob out of Imperial County Airport was 112F with several hours of afternoon heating to go. Excessive Heat Warning remains in effect through this evening. Further lowering of UL heights with strong troughing building southward out of the Great Basin will gradually allow for temperatures to see some subtle cooling by 3 to 5 degrees and temps should fall out of heat warning criteria/heat impact level thresholds. LL moisture convergence /700mb/ is better aligned across northern AZ, more from Prescott and points north, where storm activity is currently blossoming. Also sampled on the 700mb is a weak high center, per SPC MesoAnalysis/RAP, stationed over Yuma County AZ, which has put a damper on any shower or storm activity across western portions of AZ far

.....However, the best moisture surface remains along the Colorado River Valley and some storm backbuilding towards a PWAT surface of 1.25" or so is possible. Current 500mb temperatures range from a fairly typical summer value of -5C over southeast California to -8 to -9C over northern and eastern Arizona. A 500mb temperature of -8C falls around the 10th percentile of climo. These colder than normal temperatures aloft extend above 500mb and stem from a developing low pressure trough over the Southwestern U.S. This colder air aloft is forecast to persist for several days, likely through the weekend, and will result in steep mid level lapse rates. As this upper level trough deepens and digs southward along the California coast, a modest 300mb jet max will enter the base of the trough tonight into Thursday allowing for continued broad diffluent flow over our entire area. Though moisture levels will remain limited, the combination of steep lapse rates and diffluent flow will promote a more active storm environment than earlier anticipated. Still think majority storm activity will be focused over high terrain areas. Any stronger storms may result in strong downdraft winds, maybe even a few severe gusts. Gusty outflow winds will likely result in localized patchy blowing dust, but at this point don't feel storms will be organized enough for any large dust storms.

A fairly significant shift in model guidance points toward a more active storm environment this weekend. Model consensus shows the upper level trough off the Southwest U.S. coast on Thursday slowly drifting eastward into southern California sometime this weekend. This will promote a more moist southerly flow keeping moisture levels high enough for storms over the lower deserts.

**Fig. A-2:** The movement of an upper level low over the area with cooler air aloft and residual moist monsoonal air, combined with excessive heating at the surface, was expected to promote an active storm environment over the coming days. Source: Iowa Environmental Mesonet and NWS Phoenix AFD;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608172126>

**FIGURE A-3**  
**THUNDERSTORMS NEAR INTERNATIONAL BORDER**

NATIONAL WEATHER SERVICE PHOENIX AZ  
549 PM PDT WED AUG 17 2016  
CAZ033-180130-  
IMPERIAL COUNTY CA-  
549 PM PDT WED AUG 17 2016  
...SIGNIFICANT WEATHER ADVISORY...  
THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A  
SIGNIFICANT WEATHER ADVISORY FOR... SOUTHWESTERN IMPERIAL COUNTY  
FOR THE AREA NEAR THE MEXICAN BORDER JUST SOUTHEAST OF OCOTILLO  
AND NEAR THE YUMA CUTOFF HIGHWAY 98.  
UNTIL 630 PM PDT  
AT 546 PM PDT...DOPPLER RADAR WAS TRACKING A FEW STRONG  
THUNDERSTORMS 10 MILES SOUTH OF PLASTER CITY...MOVING NORTH AT 15  
MPH. THESE STORMS WILL LIKELY MOVE ACROSS THE MEXICAN BORDER TOWARD  
PLASTER CITY AND PRODUCE 40 TO 50 MPH WIND GUSTS...ALONG WITH LOW  
VISIBILITIES IN BLOWING DUST.  
LOCATIONS IMPACTED INCLUDE...  
OCOTILLO...PLASTER CITY...EL CENTRO NAVAL AIRFIELD...DIXIELAND...  
COYOTE WELLS AND SEELEY.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
LOCALLY DENSE BLOWING DUST IS POSSIBLE. IF YOU ENCOUNTER BLOWING  
DUST WHILE DRIVING...PULL OVER AS FAR OFF THE ROADWAY AS POSSIBLE AND  
PARK. TURN OFF YOUR HEADLIGHTS AND KEEP YOUR FOOT OFF THE BRAKE.

**Fig. A-3:** Late on August 17 thunderstorms were already producing powerful gusts and blowing dust near the international border. Source: Iowa Environmental Mesonet and NWS Phoenix AFD;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SPSPSR&e=2016081800491/>

### FIGURE A-4 ATYPICAL AUGUST WEATHER PATTERN

Area Forecast Discussion

National Weather Service Phoenix AZ

330 AM MST THU AUG 18 2016

.SYNOPSIS...

Temperatures will trend cooler for the remainder of the week, however remain in a slightly above normal category. Modest moisture levels will persist into the weekend with occasional spotty thunderstorm chances. **The primary threats from any of these storms will be gusty winds, patchy blowing dust,** and very isolated heavy rainfall.

.DISCUSSION...

A very unusual flow pattern will persist for the next week with anomalous westerly mid/upper tropospheric winds prevailing throughout the SW Conus. **This regime resembles a setup more typical for middle/end of September versus August with cooler temperatures aloft, steeper midlevel lapse rates,** and synoptic shortwaves acting upon residual moisture left in the atmospheric profile. Given this pattern where moisture advection will either be shallow or temporary in nature, much of the convective rainfall potential will be predicated on timing individual shortwaves and focused ascent through the region.

One such shortwave was clearly evident early this morning in WV imagery and objective analysis moving into NW Arizona on the nose of a H3 jet streak and juxtaposed with excellent diffluence aloft. Despite a paltry sfc-600mb 6-7 g/kg mixing ratio sampled on the KPSR and KTWC soundings, a slug of 10-11 g/kg moisture was analyzed through western AZ coincident with deep moisture convergence. Persistent moisture flux and ascent near the H7 layer has fully tapped MUCape near 1000 J/kg while propagation vectors were feeding quasi-stationary echoes through parts of La Paz and western Maricopa counties. A couple NCAR ensembles and the WRF-ARW high res window (as well as the operational NAM to some degree) seemed to capture this wave and resultant convection, and have adjusted morning POPs to account for a slight SE progression to the edge of the MUCape boundary.

Given the favorable upper dynamics currently present, this activity may continue to fester through the morning hours before lifting and dissipating by the afternoon hours. The preponderance of better performing high resolution output appear to capture another **shortwave diving southeast from cntrl CA/western NV and focusing convective initiation on the western edge of the deeper moisture axis through western AZ.** The largest uncertainty may lie with the effects of the current storm activity; however with the abnormally strong westerly flow aloft, cloud debris may be easily scoured eastward versus the more typical monsoon season flow would allow. Confidence in convective potential and coverage Friday through the weekend is not particularly high given global models not necessarily accurately depicting moisture content and exhibiting timing difference with shortwave passages. Even the typically bullish GFS does not reflect extensive QPF for most of the time period, and investigation of forecast BUFR soundings show little more than 7-8 g/kg mixing ratios (as one would expect given deep westerly flow). However with -8C H5 temperatures and steep H7-H5 lapse rates, it would only take a brief surge of moisture and ascent at the H7 layer (like this morning) to get a mass of thunderstorms brewing.

**Fig. A-4:** An atypical August weather pattern of cooler air aloft with hot, moist monsoonal air lower in the atmosphere created the potential for steep lapse rates and convection, spawning thunderstorms outflow winds. Source: Iowa Environmental Mesonet and NWS Phoenix AFD;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608181030>.

**FIGURE A-5**  
**BLOWING DUST FORECASTED**

CAZ033-182300-  
IMPERIAL COUNTY INCLUDING  
THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...  
IMPERIAL...THE SALTON SEA  
851 AM PDT THU AUG 18 2016  
.TODAY...MOSTLY SUNNY WITH ISOLATED SHOWERS AND THUNDERSTORMS. **PATCHY  
BLOWING DUST**. HIGHS 104 TO 109. SOUTHEAST WIND 5 TO 10 MPH. CHANCE OF  
MEASURABLE RAIN 10 PERCENT.  
.TONIGHT...CLEAR. A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS IN THE  
EVENING. LOWS 74 TO 84. WEST WIND 5 TO 10 MPH. CHANCE OF MEASURABLE  
RAIN 10 PERCENT.  
.FRIDAY...SUNNY. HIGHS 104 TO 109. LIGHT WIND IN THE MORNING BECOMING  
SOUTH 5 TO 10 MPH IN THE AFTERNOON.  
.FRIDAY NIGHT...CLEAR. LOWS 75 TO 85. SOUTHWEST WIND 5 TO 10 MPH.  
.SATURDAY...SUNNY. HIGHS 102 TO 107. SOUTHEAST WIND 5 TO 10 MPH.  
.SATURDAY NIGHT...CLEAR. LOWS IN THE MID 70S TO MID 80S.  
.SUNDAY...MOSTLY SUNNY. A 10 PERCENT CHANCE OF AFTERNOON SHOWERS AND  
THUNDERSTORMS. HIGHS 103 TO 108.  
.SUNDAY NIGHT...CLEAR. A 10 PERCENT CHANCE OF SHOWERS AND  
THUNDERSTORMS IN THE EVENING. LOWS IN THE MID 70S TO MID 80S.  
.MONDAY...SUNNY. HIGHS 102 TO 107.  
.MONDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.TUESDAY...MOSTLY SUNNY. HIGHS 102 TO 107.  
.TUESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.WEDNESDAY...SUNNY. HIGHS 102 TO 107.

**Fig. A-5:** Blowing dust was expected for Imperial County on Thursday, August 18. Source:  
Iowa Environmental Mesonet and NWS Phoenix ZF;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=2016081815517>

**FIGURE A-6**  
**COOLER ATYPICAL WEATHER CONTINUES TO BUILD**

Area Forecast Discussion

National Weather Service Phoenix AZ

840 PM MST THU AUG 18 2016

.SYNOPSIS...

Temperatures will trend cooler for the remainder of the week, however remain in a slightly above normal category. Modest moisture levels will persist into the weekend with occasional spotty thunderstorm chances. The primary threats from any of these storms will be gusty winds, patchy blowing dust, and very isolated heavy rainfall.

.DISCUSSION...

A large cool mid/upper level trof typical of September, and with cool atmospheric temperatures originating from western Canada, continue to carve out over the southwestern states this afternoon.

Circulating around this trof were unusually strong jetstream winds with its 300/250 mb wind maxima located just south of the Mexico border. As a result, mainly northern AZ was in the strongest cyclonic lateral/dynamically sheared areas where most of the tstms developed Thursday afternoon. Since the jetstream maxima was located just south of the Mexican border, our southeast CA and southwest AZ areas were also in a slightly cyclonic sheared zone supportive of isolated thunderstorms. At 8 pm mst satellite imagery showed a southwestward moving convective outflow from northwest AZ that could still trigger a few more thunderstorms in southwest AZ this evening.

Low level moisture has been thinning/decreasing the past few days and now just slightly monsoonish, or barely meeting the parameters to call it officially monsoonish.

**Fig. A-6:** Cooler upper air moving southward enhanced convection capable of triggering thunderstorm outflows late on August 18. This type of weather created the powerful gusty winds recorded at Blythe that help transport dust into Imperial County and cause elevated readings around midnight on August 19. Source: Iowa Environmental Mesonet and NWS Phoenix AFD;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608190340>.

**FIGURE A-7**  
**SHORTWAVE TROUGH MOVES SOUTH FROM NEVADA**

Area Forecast Discussion

National Weather Service Phoenix AZ

315 AM MST FRI AUG 19 2016

.SYNOPSIS...

Temperatures will remain near to slightly above the seasonal average through early next week. Modest moisture levels will persist through the weekend with occasional spotty thunderstorm chances. The primary threats from any of these storms will be gusty winds, patchy blowing dust, and very isolated heavy rainfall. The passage of a weather system during the middle of next week should allow some warming and drying across the region.

.DISCUSSION...

The regional environmental pattern and flow configuration early this morning is nearly identical to that of 24 hours ago featuring a positively tilted trough from cntrl CA through the Great Basin, abnormally strong westerly mid/upper tropospheric winds, and several shortwaves ejecting through northern and central AZ within the cyclonically sheared/highly diffluent side of the jet core. One such shortwave descended from srn Nevada and was able to invigorate organized elevated convection within the lone corridor of higher theta-e air across western AZ last evening. Per 00Z sounding data, the airmass to the east is far less conducive towards extensive storm activity given only 7-8 g/kg sfc-H7 mixing ratios; though any more defined slug of moisture displaced into the unseasonably cool temperatures aloft (-9C at H5) could support some showers into the morning hours.

Prior forecasts from the SREF mean and high resolution ensemble windows performed very well yesterday identifying shortwave features and targeting western AZ for the primary convective clusters. Will continue to utilize this approach given the stagnant, yet synoptically supportive pattern with much of northern Arizona in a favorable location for large scale ascent. High resolution windows also tend to cluster convection within the current plume of higher theta-e air through Yuma and La Paz counties, so have highlighted some modest POPs for sct storms in these areas.

There is growing evidence that thunderstorm activity will become more expansive Saturday afternoon along the Mogollon Rim and White Mountains as the moisture axis shifts east ahead of the main positively tilted trough. Certainly, much of Gila County would stand to receive better convective coverage under such an evolution, but once again signals are mixed whether outflow boundaries would be sufficient to spark organized storms at lower elevations. Much of the activity Saturday may be dependent on storm scale evolution tonight and potential modification of the environmental moisture profiles. Should deeper 10 g/kg mixing ratios materialize in the face of steep outflow boundaries, then storm formation would be favored although ensemble means are still not optimistic.

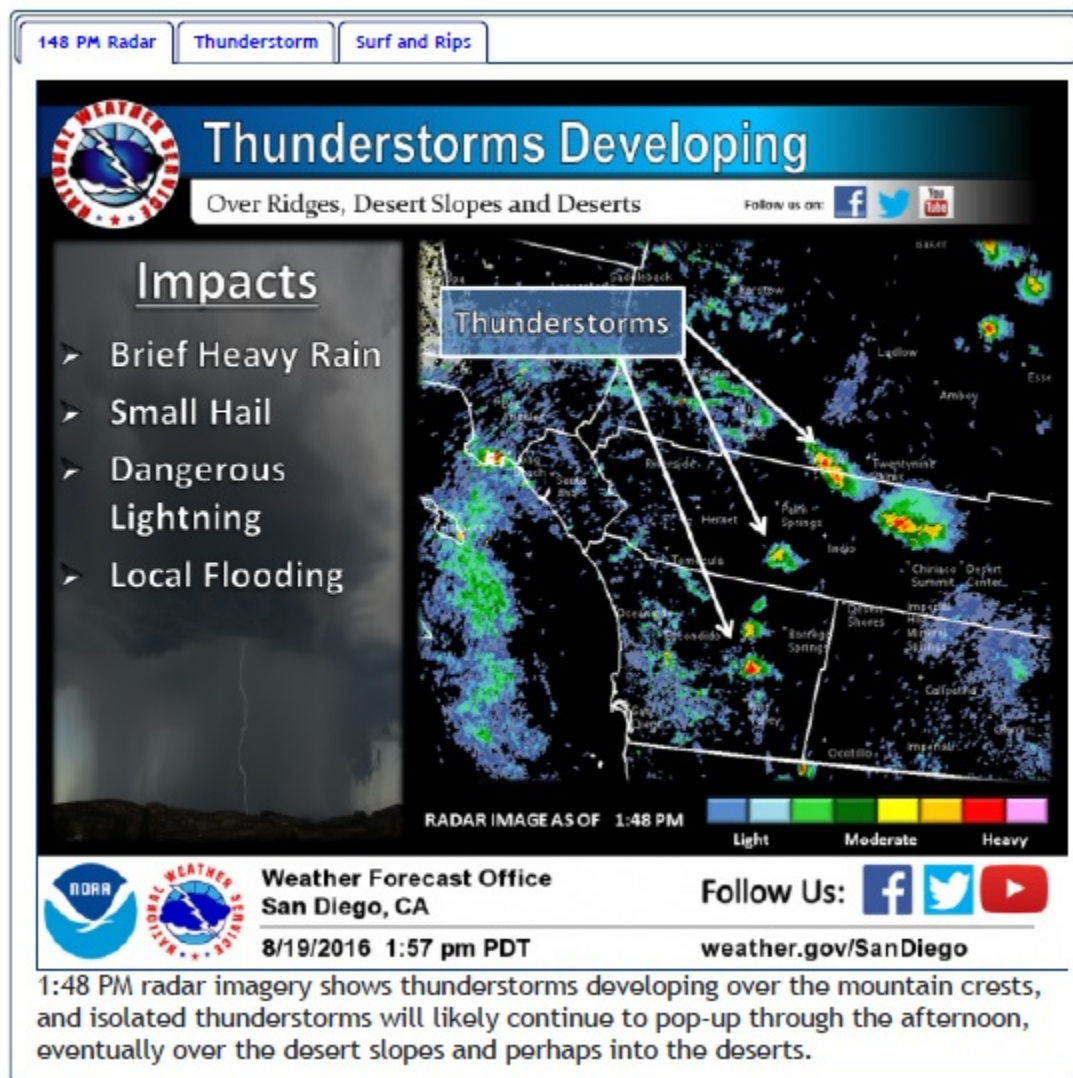
**Fig. A-7:** A shortwave trough that moved southward from Nevada helped enhance convection over the region. This promoted thunderstorms which led to gusty winds.

Source: Iowa Environmental Mesonet and NWS Phoenix AFD;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608191015>



**FIGURE A-8**  
**THUNDERSTORMS DEVELOPING OVER THE DESERTS**



**Fig. A-8:** Thunderstorms were forecasted to develop over the region, including the deserts. Source: NWS San Diego office.



**FIGURE A-9**  
**CHANCE OF THUNDERSTORMS OVER SE CA EXPECTED TO INCREASE**

## Area Forecast Discussion

National Weather Service Phoenix AZ

210 PM MST FRI AUG 19 2016

## .SYNOPSIS...

Temperatures will remain near to slightly above the seasonal average through early next week. Modest moisture levels will persist through the weekend, and into early next week, with occasional spotty thunderstorm chances. The primary threats from any of these storms will be gusty winds, patchy blowing dust, and very isolated heavy rainfall. The passage of a weather system during the middle of next week should allow some warming and drying across the region.

## .DISCUSSION...

Tonight through Monday...

After another active late night/early morning period, we are seeing a break in the thunderstorm activity at this hour across most of our cwa. The shortwave that moved across our cwa last night/early this morning is now moving off to our east. In its wake, we are seeing a bit of convergent flow across south-central and SW AZ (as seen on the latest SPC 500mb mesoscale analysis). This convergent flow is likely keeping convective development from occurring over this region at this time. Further west, in more favorable flow aloft ahead of the next shortwave that is just now ejecting eastward out of a quasistationary upper low that continues to spin just off the southern CA coast, we are now starting to see a few storms developing over Joshua Tree NP.

As far as the forecast for the rest the afternoon through tonight is concerned, it appears that subsidence aloft will likely inhibit convective development over south-central AZ this afternoon/evening. On the other hand, a combination of greater low-level moisture (sfc dewpoints up in the 60s), the presence of a weak jet max, and an approaching shortwave is expected to enhance chances for storms across SW AZ and SE CA, especially around the Yuma area. In fact, the latest SPC mesoscale analysis is showing a MLCAPE bullseye of 1000 J/kg or greater over that region. Thus, have raised pops for that region for the evening/overnight hours. As far as South-Central AZ is concerned, the presence of a bit of a cap between 600 and 700 mb and less available moisture through the column means that it will likely take some rather robust outflows from the north to produce any thunderstorms, thus keeping pops over that region well down in the slight chance range.

**Southeast California/Southwest Arizona including KIPL and KBLH:**

Skies will be clear to partly cloudy with few to sct mid and high level clouds along with light and variable and westerly component winds. There is also a slight chance of thunderstorms although there was not enough confidence on their likelihood and timing to include them in the TAFS. Outflows from distant thunderstorms this afternoon and evening could also produce variable gusty winds and a slight chance of reduced slant range visibilities due to patchy dust.

**Fig. A-9:** An approaching shortwave trough was expected to increase the chance for thunderstorms over southeast California. This in fact did happen and the resulting gusty winds lofted dust. Source: Iowa Environmental Mesonet and NWS Phoenix AFD; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608192110>.

**FIGURE A-10**  
**BLOWING DUST ADVISORY FOR IMPERIAL COUNTY**

URGENT - WEATHER MESSAGE  
 NATIONAL WEATHER SERVICE PHOENIX AZ  
 600 PM MST FRI AUG 19 2016  
 ...BLOWING DUST...  
 CAZ033-200200-  
 /O.EXA.KPSR.DU.Y.0036.000000T0000Z-160820T0200Z/  
 IMPERIAL COUNTY INCLUDING  
 THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...  
 GLAMIS...IMPERIAL...THE SALTON SEA  
 600 PM PDT FRI AUG 19 2016  
 ...BLOWING DUST ADVISORY IN EFFECT UNTIL 7 PM PDT THIS EVENING...  
 THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A BLOWING DUST  
 ADVISORY...WHICH IS IN EFFECT UNTIL 7 PM PDT THIS EVENING.  
 \* AFFECTED AREA...IMPERIAL VALLEY IN CALIFORNIA. GUSTY WINDS WITH  
 BLOWING DUST MOVING NORTH FROM MEXICO. THE ADVISORY INCLUDES  
 PORTIONS OF INTERSTATE 8 NEAR EL CENTRO.  
 \* TIMING...UNTIL 7 PM.  
 \* WINDS...GUSTS 20 TO 35 MPH.  
 \* VISIBILITY...BELOW 1 MILE IN BLOWING DUST.  
 \* IMPACTS...HAZARDOUS DRIVING CONDITIONS FROM WIDESPREAD BLOWING  
 DUST REDUCING VISIBILITY BELOW 1 MILE.  
 PRECAUTIONARY/PREPAREDNESS ACTIONS...  
 BE READY FOR A SUDDEN DROP IN VISIBILITY. IF YOU ENCOUNTER  
 BLOWING DUST OR BLOWING SAND ON THE ROADWAY OR SEE IT  
 APPROACHING...PULL OFF THE ROAD AS FAR AS POSSIBLE AND PUT YOUR  
 VEHICLE IN PARK. TURN THE LIGHTS ALL THE WAY OFF AND KEEP YOUR  
 FOOT OFF THE BRAKE PEDAL.  
 REMEMBER...PULL ASIDE...STAY ALIVE.

**Fig. A-10:** A Blowing Dust Advisory was issued for Imperial County at 6 pm. On August 19. Although this was just after the spike in concentrations, high hourly values were still being recorded. Source: Iowa Environmental Mesonet and NPW from NWS Phoenix; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWPSR&e=201608200100>

**FIGURE A-11**  
**HIGH TEMPERATURES FOR IMPERIAL COUNTY**

TABULAR STATE FORECAST FOR SOUTHWEST ARIZONA/SOUTHEAST CALIFORNIA  
NATIONAL WEATHER SERVICE PHOENIX AZ

602 PM MST FRI AUG 19 2016

ROWS INCLUDE...

DAILY PREDOMINANT DAYTIME WEATHER 6AM-6PM

FORECAST TEMPERATURES...EARLY MORNING LOW/DAYTIME HIGH

PROBABILITY OF PRECIPITATION NIGHTTIME 6PM-6AM/DAYTIME 6AM-6PM

- INDICATES TEMPERATURES BELOW ZERO

MM INDICATES MISSING DATA

FCST FCST FCST FCST FCST FCST FCST

SAT SUN MON TUE WED THU FRI

AUG 20 AUG 21 AUG 22 AUG 23 AUG 24 AUG 25 AUG 26

...SOUTH-CENTRAL ARIZONA...

PHOENIX

SUNNY SUNNY PTCLDY SUNNY SUNNY SUNNY SUNNY

83/103 82/103 83/103 83/101 82/104 82/105 83/105

10/20 20/10 10/30 30/10 00/00 00/00 00/10

GLOBE

PTCLDY PTCLDY PTCLDY PTCLDY SUNNY SUNNY SUNNY

69/94 69/94 69/94 70/89 69/95 68/97 69/96

20/30 30/20 20/30 30/20 20/00 00/10 10/20

...SOUTHWEST ARIZONA...

YUMA

VRYHOT VRYHOT VRYHOT SUNNY VRYHOT VRYHOT VRYHOT

84/106 85/106 84/106 84/105 84/107 84/108 84/107

10/00 00/00 00/00 00/00 00/00 00/00 00/00

...SOUTHEAST CALIFORNIA...

BLYTHE

VRYHOT VRYHOT VRYHOT SUNNY VRYHOT VRYHOT VRYHOT

84/107 84/106 84/107 84/105 84/108 84/109 85/109

10/00 00/00 00/00 00/00 00/00 00/00 00/00

**IMPERIAL**

**VRYHOT VRYHOT VRYHOT VRYHOT VRYHOT VRYHOT VRYHOT**

**83/109 83/108 83/109 82/106 82/110 82/111 82/111**

**Fig. A-11:** High temperatures in Imperial County with cooler air aloft created steep lapse rates and led to the formation of thunderstorms and gusty winds. Source: Iowa Environmental Mesonet and NWS Phoenix SFTPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SFTPSR&e=201608200102>.

**FIGURE A-12**  
**DUST STORM IN IMPERIAL COUNTY**

NWUS55 KPSR 200110  
LSRPSR  
PRELIMINARY LOCAL STORM REPORT  
NATIONAL WEATHER SERVICE PHOENIX AZ  
610 PM MST FRI AUG 19 2016  
..TIME... ..EVENT... ..CITY LOCATION... ..LAT.LON...  
..DATE... ..MAG.... ..COUNTY LOCATION..ST.. ..SOURCE....  
..REMARKS..  
0609 PM **DUST STORM 1 NW IMPERIAL** 32.85N 115.57W  
08/19/2016 IMPERIAL CA STORM CHASER  
**CHASER REPORTS VISIBILITIES BELOW 1/8 OF A**  
**MILE IN IMPERIAL.**

**Fig. A-12:** A NWS Storm chaser reported a dust storm in Imperial County. Source: Iowa Environmental Mesonet and NWS Phoenix LSRPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=LSRPSR&e=201608200110>.

**FIGURE A-13**  
**DUST STORM IN IMPERIAL COUNTY**

SPECIAL WEATHER STATEMENT  
NATIONAL WEATHER SERVICE PHOENIX AZ  
**611 PM MST FRI AUG 19 2016**  
AZZ020-CAZ031-033-200200-  
LOWER COLORADO RIVER VALLEY AZ AZ-**IMPERIAL COUNTY** CALOWER  
COLORADO RIVER VALLEY CA CA-  
611 PM MST FRI AUG 19 2016  
...**SIGNIFICANT WEATHER ADVISORY...**  
THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A  
SIGNIFICANT WEATHER ADVISORY FOR...  
SOUTHWESTERN LA PAZ AND **EAST CENTRAL IMPERIAL COUNTIES**  
UNTIL 700 PM MST/700 PM PDT/  
AT 611 PM MST/611 PM PDT/...**DOPPLER RADAR WAS TRACKING A STRONG**  
**THUNDERSTORM 15 MILES SOUTH OF CIBOLA...OR 18 MILES NORTHWEST OF**  
**MARTINEZ LAKE...MOVING SOUTH AT 10 MPH.**  
**DIME SIZE HAIL AND WIND GUSTS UP TO 50 MPH WILL BE POSSIBLE** WITH THIS  
STORM. THIS STORM IS ALSO PRODUCING HEAVY RAIN.  
BLOWING DUST FROM THE STORM IS ALSO POSSIBLE.  
LOCATIONS IMPACTED INCLUDE...  
GLAMIS.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
LOCALLY DENSE BLOWING DUST IS POSSIBLE. IF YOU ENCOUNTER BLOWING  
DUST WHILE DRIVING...PULL OVER AS FAR OFF THE ROADWAY AS POSSIBLE AND  
PARK. TURN OFF YOUR HEADLIGHTS AND KEEP YOUR FOOT OFF THE BRAKE.

**Fig. A-13:** Doppler radar tracked an intense thunderstorm capable of producing 50 mph gusts on August 19. Source: Iowa Environmental Mesonet and NWS Phoenix SPSPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SPSPSR&e=201608200111>.

**FIGURE A-14**  
**SEVERE THUNDERSTORM WARNING AND DAMAGING WINDS FOR SOUTHWEST ARIZONA**

SVRPSR  
AZC027-200145-  
/O.NEW.KPSR.SV.W.0045.160820T0114Z-160820T0145Z/  
BULLETIN - IMMEDIATE BROADCAST REQUESTED  
SEVERE THUNDERSTORM WARNING  
NATIONAL WEATHER SERVICE PHOENIX AZ  
614 PM MST FRI AUG 19 2016  
THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A  
\* SEVERE THUNDERSTORM WARNING FOR...  
WEST CENTRAL YUMA COUNTY IN SOUTHWESTERN ARIZONA... CENTERED ON  
LAGURTA BETWEEN WELLTON AND FORTUNA HILLS...INTERSTATE 8.  
\* UNTIL 645 PM MST  
\* AT 613 PM MST...DOPPLER RADAR INDICATED A SEVERE THUNDERSTORM  
CAPABLE OF PRODUCING DAMAGING WINDS IN EXCESS OF 60 MPH. THIS  
STORM WAS LOCATED OVER LIGURTA...OR 8 MILES EAST OF FORTUNA  
FOOTHILLS...AND MOVING NORTHWEST AT 5 MPH.  
\* LOCATIONS IMPACTED INCLUDE...  
FORTUNA FOOTHILLS...WELLTON...BLAISDELL AND LIGURTA.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
SEVERE THUNDERSTORMS PRODUCE DAMAGING WINDS...DESTRUCTIVE  
HAIL...DEADLY LIGHTNING AND VERY HEAVY RAIN. FOR YOUR  
PROTECTION...MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF YOUR  
HOME OR BUSINESS. HEAVY RAINS FLOOD ROADS QUICKLY SO DO NOT DRIVE  
INTO AREAS WHERE WATER COVERS THE ROAD.

**Fig. A-14:** The powerful thunderstorm winds that struck Imperial County also hit southwest Arizona. This supports the region extent of the weather event. Source: Iowa Environmental Mesonet and NWS Phoenix SVRPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SVRPSR&e=201608200114>.


**FIGURE A-15**  
**SEVERE THUNDERSTORM WARNING FOR YUMA COUNTY**

SEVERE WEATHER STATEMENT  
NATIONAL WEATHER SERVICE PHOENIX AZ  
624 PM MST FRI AUG 19 2016  
AZC027-200145-  
/O.CON.KPSR.SV.W.0045.000000T0000Z-160820T0145Z/  
YUMA AZ-  
624 PM MST FRI AUG 19 2016  
...A SEVERE THUNDERSTORM WARNING REMAINS IN EFFECT UNTIL 645 PM MST  
FOR WEST CENTRAL YUMA COUNTY...  
AT 624 PM MST...DOPPLER RADAR INDICATED A SEVERE THUNDERSTORM CAPABLE  
OF PRODUCING DAMAGING WINDS IN EXCESS OF 60 MPH. THIS STORM WAS  
LOCATED NEAR LIGURTA...OR 8 MILES NORTHEAST OF FORTUNA FOOTHILLS...  
MOVING NORTHWEST AT 5 MPH.  
LOCATIONS IMPACTED INCLUDE...  
FORTUNA FOOTHILLS...WELLTON...BLAISDELL AND LIGURTA.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
SEVERE THUNDERSTORMS PRODUCE DAMAGING WINDS...DESTRUCTIVE  
HAIL...DEADLY LIGHTNING AND VERY HEAVY RAIN. FOR YOUR PROTECTION  
MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF YOUR HOME OR  
BUSINESS. HEAVY RAINS FLOOD ROADS QUICKLY SO DO NOT DRIVE INTO AREAS  
WHERE WATER COVERS THE ROAD.

**Fig. A-15:** A Severe Thunderstorm Warning was issued for parts of Yuma County. This supports the region extent of the weather event. Source: Iowa Environmental Mesonet and NWS Phoenix SVRPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SVSPSR&e=201608200124>.


**FIGURE A-16**  
**DUST STORM WARNING REMAINS IN EFFECT FOR IMPERIAL COUNTY**

8/19/2016 Alert for Imperial County (California) Issued by the National Weather Service



Current NWS Alert:

## Dust Storm Warning



[Site Map](#)
[News](#)
[Organization](#)

NWS
All NOAA

[Home](#) > [Alerts](#) > [California](#) > Dust Storm Warning Issued by NWS Phoenix (Central Arizona and California Desert)

**Message:** NOAA-NWS-ALERTS-CA12560E83ED40.DustStormWarning.12560E842A30CA.PSRNPWPSR.c2d0eef4a9e711bc35a2225799e5c262 from w-nws.webmaster@noaa.gov

**Sent:** 18:44 PDT on 08-19-2016

**Effective:** 18:44 PDT on 08-19-2016

**Expires:** 20:00 PDT on 08-19-2016

**Event:** Dust Storm Warning

**Alert:** ...BLOWING DUST...

...DUST STORM WARNING REMAINS IN EFFECT UNTIL 8 PM PDT THIS EVENING...

- \* AFFECTED AREA...IMPERIAL VALLEY IN CALIFORNIA. GUSTY WINDS WITH BLOWING DUST MOVING NORTH FROM MEXICO. THE WARNING INCLUDES PORTIONS OF INTERSTATE 8 NEAR EL CENTRO.
- \* TIMING...UNTIL 8 PM.
- \* WINDS...GUSTS 20 TO 40 MPH.
- \* VISIBILITY...BELOW 1/4 MILE IN BLOWING DUST AT TIMES.
- \* IMPACTS...HAZARDOUS DRIVING CONDITIONS FROM WIDESPREAD BLOWING DUST REDUCING VISIBILITY BELOW 1/4 MILE AT TIMES.

**Instructions:** BE READY FOR A SUDDEN DROP IN VISIBILITY TO NEAR ZERO. IF YOU ENCOUNTER BLOWING DUST OR BLOWING SAND ON THE ROADWAY OR SEE IT APPROACHING...PULL OFF THE ROAD AS FAR AS POSSIBLE AND PUT YOUR VEHICLE IN PARK. TURN THE LIGHTS ALL THE WAY OFF AND KEEP YOUR FOOT OFF THE BRAKE PEDAL. REMEMBER...PULL ASIDE...STAY ALIVE.

**Target Area:** Imperial County

**Forecast Office:** NWS Phoenix (Central Arizona and California Desert)

US Dept of Commerce  
National Oceanic and Atmospheric Administration  
National Weather Service  
1325 East West Highway  
Silver Spring, MD 20910  
Page Author: NWS Internet Services Team

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**Fig. A-16:** A Dust Storm Warning remained in effect for Imperial County until 8 p.m.  
 Source: NWS Phoenix office.



**FIGURE A-17**  
**POWERFUL WINDS BEING TRACKED MOVING INTO IMPERIAL COUNTY**

SPECIAL WEATHER STATEMENT  
 NATIONAL WEATHER SERVICE PHOENIX AZ  
 703 PM MST FRI AUG 19 2016  
 AZZ025-026-CAZ031-033-200245-  
 SOUTHWEST DESERTS AZ-YUMA/MARTINEZ LAKE AND VICINITY AZIMPERIAL  
 COUNTY CA-LOWER COLORADO RIVER VALLEY CA 703 PM MST FRI AUG 19 2016  
 ...SPECIAL WEATHER STATEMENT...  
 AT 701 PM MST/701 PM PDT/...DOPPLER RADAR WAS TRACKING A LINE OF  
 STRONG WINDS ALONG A LINE EXTENDING FROM 7 MILES SOUTH OF MARTINEZ  
 LAKE TO NEAR WINTERHAVEN TO 12 MILES NORTH OF ALGODONES DUNES...AND  
 MOVING SOUTHWEST AT 15 MPH.  
 WINDS 30 FROM 40 MPH WILL BE POSSIBLE WITH THESE STORMS. BLOWING  
 DUST IS ALSO POSSIBLE.  
 LOCATIONS IMPACTED INCLUDE...  
 YUMA...SOMERTON...GADSDEN...FORTUNA FOOTHILLS...BLAISDELL...ARABY...  
 GORDON'S WELL...ANDRADE...ALGODONES DUNES...WINTERHAVEN AND KINTER.  
 PRECAUTIONARY/PREPAREDNESS ACTIONS...  
 LOCALLY DENSE BLOWING DUST IS POSSIBLE. IF YOU ENCOUNTER BLOWING  
 DUST WHILE DRIVING...PULL OVER AS FAR OFF THE ROADWAY AS POSSIBLE AND  
 PARK. TURN OFF YOUR HEADLIGHTS AND KEEP YOUR FOOT OFF THE BRAKE.

**Fig. A-17:** A line of strong winds up to 40 mph was tracked by Doppler radar moving southwest from near the vicinity of the Algodones Dunes. Source: Iowa Environmental Mesonet and NWS Phoenix SPSPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SPSPSR&e=201608200203.1>.

**FIGURE A-18**  
**WINDS IN EXCESS OF 30MPH BEING TRACKED IN IMPERIAL COUNTY**

SPSPSR  
 SPECIAL WEATHER STATEMENT  
 NATIONAL WEATHER SERVICE PHOENIX AZ  
 728 PM PDT FRI AUG 19 2016  
 CAZ033-200300-  
 IMPERIAL COUNTY CA-  
 728 PM PDT FRI AUG 19 2016  
 ...SPECIAL WEATHER STATEMENT...  
 AT 727 PM PDT...DOPPLER RADAR WAS TRACKING A STRONG THUNDERSTORM 13  
 MILES NORTH OF ALGODONES DUNES...OR 24 MILES NORTHWEST OF YUMA...  
 MOVING WEST AT 15 MPH.  
 WINDS IN EXCESS OF 30 MPH WILL BE POSSIBLE WITH THIS STORM. THIS  
 STORM IS CAPABLE OF PRODUCING HEAVY RAIN.  
 LOCATIONS IMPACTED INCLUDE...

**Fig. A-18:** A thunderstorm with winds over 30 mph was tracked by Doppler radar moving west from near the vicinity of the Algodones Dunes. Source: Iowa Environmental Mesonet and NWS Phoenix SPSPSR;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SPSPSR&e=201608200203.1>.

**FIGURE A-19**  
**UNUSUAL WEATHER CREATES POWERFUL THUNDERSTORMS ACROSS THE REGION**

Area Forecast Discussion

National Weather Service Phoenix AZ

850 PM MST FRI AUG 19 2016

.SYNOPSIS...

Temperatures will remain near to slightly above the seasonal average through early next week. Modest moisture levels will persist through the weekend, and into early next week, with occasional spotty thunderstorm chances. The primary threats from any of these storms will be gusty winds, patchy blowing dust, and very isolated heavy rainfall. The passage of a weather system during the middle of next week should allow some warming and drying across the region.

.DISCUSSION...

The large upper level trof, again unusual for August, continued to sag southward from its central position north of Las Vegas last night, to the Mohave Desert southwest of Las Vegas this evening. Our forecast area, southeast CA to south central AZ, came under increasing upper level cyclonic shear as the 300/250 mb jetstream wind maxima move farther south of the border into Mexico. This evenings weather balloon data showed a weak upper level shortwave moving through southwest AZ this evening, which sparked many thunderstorms across southeast CA and southwest AZ Friday afternoon and evening, some very powerful with reflectivities off the scale.

A few weak thunderstorms were also making a run at central Phoenix from the north at 8 pm, but for the most part were weak with tops mostly in the 30-35 thsd ft range, puny for the monsoon.

Thunderstorms will slowly diminish in southeast CA and southwest AZ by late evening, but eastward moving convective outflows could renew isolated storms after midnight on the south central AZ deserts vicinity Phoenix through late night.

On Saturday the same scenario will play out. The jetstream core will remain south of the border with cyclonic upper level lateral shear supporting a few afternoon thunderstorms mainly in south central AZ during the late afternoon and evening. Current forecasts look ok for now. No updates planned.

**Fig. A-19:** The upper level trough, unusual for August, helped promote conditions for thunderstorms which were tracked by Doppler radar in Yuma.. Source: Iowa Environmental Mesonet and NWS Phoenix AFD;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608200350>.

**FIGURE A-20**  
**DUST STORM WARNING REMAINS IN EFFECT FOR PORTIONS OF INTERSTATE 8**

...**WARNING DENSE BLOWING DUST...**  
AZZ025-CAZ031-200700-  
/O.NEW.KPSR.DS.W.0011.160820T0521Z-160820T0700Z/  
/O.CON.KPSR.DU.Y.0038.000000T0000Z-160820T0700Z/  
YUMA/MARTINEZ LAKE AND VICINITY-LOWER COLORADO RIVER VALLEY CAINCLUDING  
THE CITIES OF...FORTUNA FOOTHILLS...SAN LUIS...  
SOMERTON...YUMA...BLYTHE  
1021 PM MST FRI AUG 19 2016 /1021 PM PDT FRI AUG 19 2016/  
...**DUST STORM WARNING IN EFFECT UNTIL MIDNIGHT MST /MIDNIGHT PDT/  
TONIGHT...**  
...BLOWING DUST ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MST  
/MIDNIGHT PDT/ TONIGHT...  
THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A DUST STORM  
WARNING...WHICH IS IN EFFECT UNTIL MIDNIGHT MST /MIDNIGHT PDT/  
TONIGHT.  
\* **AFFECTED AREA...ALONG INTERSTATE 8 FROM TACNA TO 15 MILES WEST OF  
YUMA.**  
\* TIMING...THROUGH MIDNIGHT.  
\* **WINDS...GUSTS 30 TO 40 MPH FROM THE EAST.**  
\* VISIBILITY...BELOW 1/4 MILE IN DENSE BLOWING DUST.  
\* IMPACTS...HAZARDOUS DRIVING CONDITIONS FROM WIDESPREAD BLOWING  
DUST REDUCING VISIBILITY BELOW 1/4 MILE.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
BE READY FOR A SUDDEN DROP IN VISIBILITY. IF YOU ENCOUNTER  
BLOWING DUST OR BLOWING SAND ON THE ROADWAY OR SEE IT  
APPROACHING...PULL OFF THE ROAD AS FAR AS POSSIBLE AND PUT YOUR  
VEHICLE IN PARK. TURN THE LIGHTS ALL THE WAY OFF AND KEEP YOUR  
FOOT OFF THE BRAKE PEDAL.  
REMEMBER...PULL ASIDE...STAY ALIVE.

**Fig. A-20:** A Dust Storm Warning remained in effect for portions of Interstate 8 from areas east of Yuma to 15 miles west in southeast California. Source: Iowa Environmental Mesonet and NWS Phoenix NPWPSP;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWPSR&e=201608200521>

**FIGURE A-21**  
**THUNDERSTORMS DEVELOPING OVER THE REGION**

Increase in Storms

## Further Increase in Thunderstorm Coverage Today

Summary	Impacts
Thunderstorms are expected to develop over the higher terrain of Central Arizona as well as portions of southern Arizona leading to large areas of strong winds and blowing dust (especially south and west of Phoenix). Localized damaging winds and flooding possible.	<ul style="list-style-type: none"> <li>Strong winds <ul style="list-style-type: none"> <li>Areas of blowing dust likely</li> <li>Localized damage possible</li> </ul> </li> <li>Lightning</li> <li>Localized heavy rain</li> </ul>

### Pull Aside, Stay Alive

NWS Phoenix

### When Thunder Roars Go Indoors

Chris Frailey

### Turn Around Don't Drown

**Weather Forecast Office  
Phoenix, AZ**  
8/20/2016 2:53 am MST

Follow Us:



  
[weather.gov/Phoenix](http://weather.gov/Phoenix)

Thunderstorms are expected to develop over the higher terrain of Central Arizona as well as portions of southern Arizona today leading to large areas of strong winds and blowing dust on the lower deserts (especially south and west of Phoenix). Anticipate expanded coverage of thunderstorms compared to the past couple of days. Damaging strength winds are possible but will be much more localized. Likewise, heavy rain is possible but flooding, if any, will be localized.

**Fig. A-21:** A Weather Story issued on August 20 forecasted that thunderstorms from the monsoonal air would create possibly damaging winds and blowing dust in the lower deserts south and west of Phoenix in the direction of southeast California. Source: NWS Phoenix office.

## FIGURE A-22 THUNDERSTORMS TO BRING GUSTY WINDS & BLOWING DUST

Area Forecast Discussion

National Weather Service Phoenix AZ

510 AM MST SAT AUG 20 2016

SYNOPSIS...

Moisture levels will increase slightly into early next week with occasionally better chances of thunderstorm affecting lower elevation communities. **The primary threats from any of these storms will be very gusty winds, dense blowing dust,** and isolated heavy rainfall. The passage of a weather system through the region during the middle of next week will lead to drier weather and slightly warmer temperatures.

DISCUSSION...

The persistent pattern of SW Conus troughing was becoming more pinched equatorward as strong ridging aloft was building into the Pacific NW. Regardless, anomalous westerly jet winds continued to punch into the region bringing a regular supply of shortwaves over a plume of marginally supportive boundary layer moisture. Early this morning, one convectively enhanced shortwave was ejecting through cntrl AZ while another upper level wave over far southern NV was filling into the positively tilted trough base. It appears this secondary upper level wave forcing increasing diffluent flow along with further energy ejecting east within the jet core will support convection late this afternoon and evening across much of cntrl AZ more expansive than experienced the past couple days. **Storms more isolated in nature may also percolate once again through SE California and western AZ.**

**Southeast California/Southwest Arizona including KIPL and KBLH:**

Weak upper low over Arizona with embedded disturbances may enable isolated weak showers over Mohave and San Bernadino Counties to move into eastern Riverside later this morning. Confidence too low to insert TEMPO SHRA/TSRA in the BLH TAF but utilized VCSH. **Later today, anticipate storm development over Yavapai and La Paz Counties producing strong outflows that spread far afield. This outflow is anticipated to meet up with outflow from storms over Pima County leading to an active evening (also affecting portions of Imperial and eastern Riverside Counties).** This also means greater potential for blowing dust. Just where the boundaries meet will be critical to where robust storm development takes place. Too many uncertainties at this point to insert TEMPO or prevailing TSRA in the TAFs but showing highly variable and gusty winds for the evening and indicate storms "in the neighborhood" with VCTS for BLH. **Imperial Valley could also see storms but chances are better near and east of the Lower Colorado River Valley.**

**Fig. A-22:** By early August 20 the NWS identified the primary threats of the thunderstorm activity over the region to be gusty winds and blowing dust. The evening of August 20 was expected to have active weather extending into Imperial County. Source: Iowa Environmental Mesonet;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608201210>.

**FIGURE A-23**  
**UNSTABLE MONSOONAL AIR BRINGS ACTIVE WEATHER**

Area Forecast Discussion

National Weather Service Phoenix AZ

905 AM MST SAT AUG 20 2016

.SYNOPSIS...

Moisture levels will increase slightly into early next week with occasionally better chances of thunderstorm affecting lower elevation communities. **The primary threats from any of these storms will be very gusty winds, dense blowing dust,** and isolated heavy rainfall. The passage of a weather system through the region during the middle of next week will lead to drier weather and slightly warmer temperatures.

.DISCUSSION...

**There is the potential for some interesting weather developing later today and this evening across the lower deserts as outflow boundary interactions look to set up over the lower central and southwest deserts.** We may see a "pac-man" scenario play out where rim convection and southeast AZ mountain convection both send outflows westward into the south central deserts and **as these outflows meet they force even stronger convection that propagates towards the west and southwest and eventually reaches the lower Colorado River valley later tonight.** For the morning hours today, we will likely see lingering showers and maybe a weak thunderstorm as weak deformation aloft supports upward motion in a rather moist and weakly unstable environment. Central desert dewpoints were in the low to mid 60s at 8 am and the Phoenix raob indicated nearly 1.5 inches of PWAT along with about 650 j/kg MLCAPE. Current **SPC mesoanalysis graphics depicted the best MLCAPE far out to the west, near the lower Colorado river valley, with much lower values** - less than 500 j/kg - across the greater Phoenix area. As such, any convection this morning in the central deserts should be relatively weak. Steering flow aloft this afternoon and evening looks to be weak as well, favoring a westerly direction with 700-300mb mean winds mostly below 15kt. Given the weak steering flow aloft, storms will not be able to quickly move off higher terrain; boundary interactions will play the bigger role in driving convection over the deserts. Several hi-res mesoscale models including the SPC SSE0 and the WRF4km advertise storms developing quickly over the Mogollon rim and southeast AZ mountains this afternoon, with outflow boundaries from these storms moving west and merging causing new storms to develop and push west into the western/southwest deserts overnight. **High amounts of DCAPE will allow for strong and gusty outflow winds sufficient to cause areas of blowing dust over the deserts.** Rim convection will likely be supported by a strong diffluence field in the 300mb streamlines, forecast by both the NAM and the GFS. As such, best POPs for this evening will remain focused across the south central and southwestern AZ deserts, areas mostly to the southwest of central Phoenix. Of course, not all of the hi-res models are as bullish on this convective interaction, including the NAM4km. Still, we have at least moderate confidence in active convective weather later this afternoon and evening and we will not lower our POPs over the central deserts. Time will tell...

**Fig. A-23:** The unstable monsoonal air brought a strong potential for gusty winds generated by outflow boundaries. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201608201605>.

**FIGURE A-24**  
**SEVERE THUNDERSTORMS IN THE REGION**

BULLETIN - IMMEDIATE BROADCAST REQUESTED

**SEVERE THUNDERSTORM WARNING**

NATIONAL WEATHER SERVICE PHOENIX AZ

246 PM PDT SAT AUG 20 2016

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A

\* **SEVERE THUNDERSTORM WARNING FOR...**

**RIVERSIDE COUNTY IN SOUTHERN CALIFORNIA...**

**ALONG INTERSTATE 10 NEAR DESERT CENTER**

\* UNTIL 330 PM PDT

\* AT 245 PM PDT...DOPPLER RADAR INDICATED POWERFUL THUNDERSTORMS CAPABLE OF PRODUCING DAMAGING WINDS IN EXCESS OF 60 MPH. THIS STORM WAS LOCATED NEAR DESERT CENTER...AND MOVING NORTHWEST AT 10 MPH. NICKEL SIZE HAIL MAY ALSO ACCOMPANY THE DAMAGING WINDS. CAUTION...HIGH PROFILE VEHICLES CAN BE BLOWN OFF THE ROAD.

\* LOCATIONS IMPACTED INCLUDE...

DESERT CENTER AND EAGLE MTN.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SEVERE THUNDERSTORMS PRODUCE DAMAGING WINDS...DESTRUCTIVE HAIL...DEADLY LIGHTNING AND VERY HEAVY RAIN. FOR YOUR PROTECTION...MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF YOUR HOME OR BUSINESS. HEAVY RAINS FLOOD ROADS QUICKLY SO DO NOT DRIVE INTO AREAS WHERE WATER COVERS THE ROAD.

**Fig. A-24:** A Severe Thunderstorm Warning was issued the afternoon of August 20 near Desert Center on Interstate 10 just north of Imperial County. This supports that thunderstorm outflows were producing gusty winds in the hours prior to the exceedance at El Centro. Source: Iowa Environmental Mesonet;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=SVRPSR&e=201608202146>.



**FIGURE A-25**  
**PATCHY BLOWING DUST FOR IMPERIAL COUNTY IN THE EVENING**

CAZ033-211100-

**IMPERIAL COUNTY INCLUDING**

THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...

IMPERIAL...THE SALTON SEA

459 PM PDT SAT AUG 20 2016

**.TONIGHT...PATCHY BLOWING DUST IN THE EVENING. CLEAR WITH A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS.** LOWS 73 TO 83. SOUTHWEST WIND

5 TO 15 MPH. CHANCE OF MEASURABLE RAIN 10 PERCENT.

.SUNDAY...MOSTLY SUNNY. HIGHS 100 TO 105. SOUTH WIND AROUND 5 MPH IN THE MORNING INCREASING TO 10 TO 15 MPH IN THE AFTERNOON.

.SUNDAY NIGHT...CLEAR. LOWS 73 TO 83. WEST WIND 5 TO 10 MPH.

.MONDAY...MOSTLY SUNNY. HIGHS 102 TO 107. SOUTHWEST WIND 5 TO 10 MPH.

.MONDAY NIGHT...CLEAR. LOWS 72 TO 82. WEST WIND 5 TO 10 MPH.

.TUESDAY...SUNNY. HIGHS 102 TO 107.

.TUESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.WEDNESDAY...SUNNY. HIGHS 102 TO 107.

.WEDNESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.THURSDAY...SUNNY. HIGHS 101 TO 106.

.THURSDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.FRIDAY...SUNNY. HIGHS 102 TO 107.

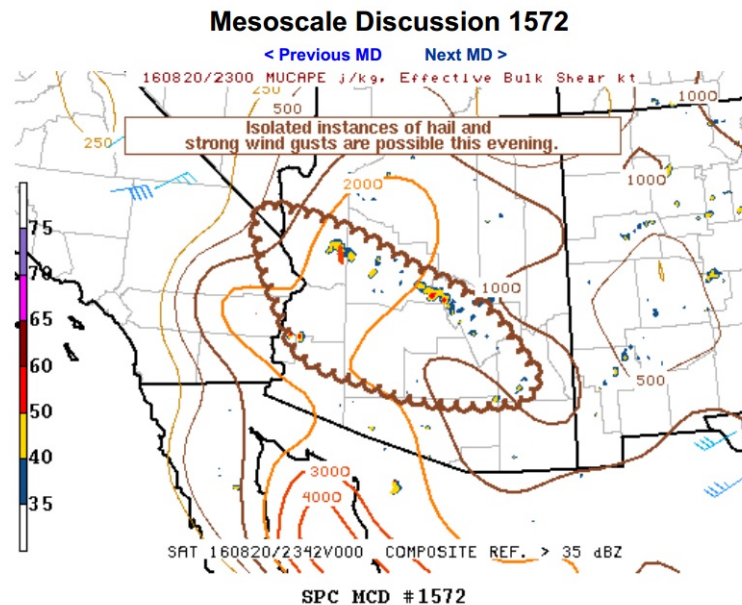
.FRIDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.SATURDAY...SUNNY. HIGHS 103 TO 108.

**Fig. A-25:** A Zone Forecast for Imperial County issued at 4:59 p.m. on August 20 forecasted blowing dust in the evening and night time hours. Source: Iowa Environmental Mesonet;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201608202359>.

**FIGURE A-26**  
**STRONG GUSTS ACROSS PORTIONS OF ARIZONA AND SE CALIFORNIA**



MESOSCALE DISCUSSION 1572

NWS STORM PREDICTION CENTER NORMAN OK

0655 PM CDT SAT AUG 20 2016

AREAS AFFECTED...CENTRAL/SOUTHERN AZ...FAR ERN CA...FAR SRN NV

CONCERNING...SEVERE POTENTIAL...WATCH UNLIKELY

VALID 202355Z - 210200Z

PROBABILITY OF WATCH ISSUANCE...5 PERCENT

SUMMARY...ISOLATED INSTANCES OF HAIL AND DAMAGING WIND WILL BE POSSIBLE INTO THE EVENING. WATCH ISSUANCE IS NOT ANTICIPATED.

DISCUSSION...AT 2345Z...THUNDERSTORMS THAT EARLIER DEVELOPED ALONG THE MOGOLLON RIM ARE PROPAGATING SLOWLY SWWD TOWARD THE LOWER ELEVATION AREAS. SPORADIC INSTANCES OF LARGE HAIL HAVE BEEN REPORTED WITH THESE STORMS AND THERE WILL CONTINUE TO BE A MARGINAL HAIL RISK IN THE SHORT TERM...GIVEN MODERATE BUOYANCY THAT IS IN PLACE OVER THE HIGHER TERRAIN. WITH TIME...CONSOLIDATING OUTFLOWS WILL BEGIN TO APPROACH LOWER ELEVATION AREAS...THOUGH THE PATTERN IS NOT OVERLY FAVORABLE FOR A SUSTAINED ORGANIZED CONVECTIVE SYSTEM...GIVEN WLY LOW-LEVEL FLOW...VERY MODEST MIDLEVEL FLOW...AND GENERALLY WEAKER INSTABILITY INTO THE DESERT REGIONS. HOWEVER...SOME GUSTY WINDS WILL BE POSSIBLE IF EVEN WEAK CONVECTION CAN PERSIST ALONG OR IMMEDIATELY BEHIND THE SWWD-PROPAGATING OUTFLOW INTO SRN/SWRN AZ...ERN CA...AND SRN NV THIS EVENING. THE THREAT IS EXPECTED TO REMAIN TOO ISOLATED/MARGINAL FOR WATCH ISSUANCE.

**Fig. A-26:** A Mesoscale Discussion issued 4:55 p.m. on August 20 forecasted that thunderstorms over the Mogollon Rim in Arizona were moving toward lower terrain and that gusty outflows winds would reach as far west as southeastern California. This would have matched the general timeline for the elevated PM10 concentrations at El Centro early on August 21. Source: SPC Mesoscale Discussion Center; <http://www.spc.noaa.gov/products/md/2016/md1572.html>.

**FIGURE A-27****PATCHY BLOWING DUST FOR IMPERIAL COUNTY DURING THE NIGHT**

CAZ033-211100-

**IMPERIAL COUNTY** INCLUDING

THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...

IMPERIAL...THE SALTON SEA

827 PM PDT SAT AUG 20 2016

**.TONIGHT...PATCHY BLOWING DUST IN THE EVENING.** CLEAR WITH A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 73 TO 83. SOUTHWEST WIND 5 TO 15 MPH. CHANCE OF MEASURABLE RAIN 10 PERCENT.

.SUNDAY...MOSTLY SUNNY. HIGHS 100 TO 105. SOUTH WIND AROUND 5 MPH IN THE MORNING INCREASING TO 10 TO 15 MPH IN THE AFTERNOON.

.SUNDAY NIGHT...CLEAR. LOWS 73 TO 83. WEST WIND 5 TO 10 MPH.

.MONDAY...MOSTLY SUNNY. HIGHS 102 TO 107. SOUTHWEST WIND 5 TO 10 MPH.

.MONDAY NIGHT...CLEAR. LOWS 72 TO 82. WEST WIND 5 TO 10 MPH.

.TUESDAY...SUNNY. HIGHS 102 TO 107.

.TUESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.WEDNESDAY...SUNNY. HIGHS 102 TO 107.

.WEDNESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.THURSDAY...SUNNY. HIGHS 101 TO 106.

.THURSDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

.FRIDAY...SUNNY. HIGHS 102 TO 107.

.FRIDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.

**Fig. A-27:** A Zone Forecast for Imperial County issued at 8:27 p.m. on August 20 forecasted blowing dust in the evening and night time hours. Source: Iowa Environmental Mesonet;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201608210327>.

**FIGURE A-28**  
**IMPERIAL COUNTY ZONE FORECAST**

CAZ033-212300-  
IMPERIAL COUNTY-  
INCLUDING THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...  
IMPERIAL...THE SALTON SEA  
206 AM PDT SUN AUG 21 2016

.TODAY...MOSTLY SUNNY IN THE MORNING...THEN PARTLY SUNNY WITH A  
SLIGHT CHANCE OF AFTERNOON SHOWERS AND THUNDERSTORMS. HIGHS 100 TO  
105. SOUTH WIND 5 TO 10 MPH. CHANCE OF MEASURABLE RAIN 10 PERCENT.  
.TONIGHT...MOSTLY CLEAR. A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS  
IN THE EVENING. LOWS 73 TO 83. SOUTHWEST WIND 5 TO 10 MPH. CHANCE OF  
MEASURABLE RAIN 10 PERCENT.  
.MONDAY...SUNNY. HIGHS 100 TO 105. SOUTHWEST WIND AROUND 5 MPH IN THE  
MORNING BECOMING SOUTH 10 TO 15 MPH IN THE AFTERNOON.  
.MONDAY NIGHT...CLEAR. LOWS 73 TO 83. WEST WIND 5 TO 15 MPH.  
.TUESDAY...SUNNY. HIGHS 100 TO 105. SOUTHWEST WIND 5 TO 10 MPH.  
.TUESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.WEDNESDAY...SUNNY. HIGHS 100 TO 105.  
.WEDNESDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.THURSDAY...SUNNY. HIGHS 102 TO 107.  
.THURSDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.FRIDAY...SUNNY. HIGHS 101 TO 106.  
.FRIDAY NIGHT...CLEAR. LOWS IN THE LOWER 70S TO LOWER 80S.  
.SATURDAY...SUNNY. HIGHS 98 TO 103

**Fig. A-28:** Although winds were forecasted to reach 10 mph, in actuality winds were higher. Gusty winds upstream from Imperial County lofted dust that was transported into the valley area. Source: Iowa Environmental Mesonet;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201608210906>.

**FIGURE A-29**  
**AREA FORECAST DISCUSSION – RESIDUAL MONSOONAL AIR OVER REGION**

AREA FORECAST DISCUSSION

National Weather Service San Diego CA

327 AM PDT SUN AUG 21 2016

.SYNOPSIS...

Residual monsoonal moisture will continue a slight chance of thunderstorms this afternoon and early evening...mainly near the mountains from the San Bernardino Mountains southward.

Otherwise...high temperatures will remain near to slightly below average into next weekend. The marine layer and weak onshore flow will bring areas of night and morning coastal low clouds and patchy fog extending locally inland. There will be gusty southwest to west winds in the mountains and deserts each afternoon and evening.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

Residual monsoonal moisture will bring a slight chance of afternoon and early evening thunderstorms...mainly near the mountains from the San Bernardino Mountains southward. Outflow from thunderstorms over Arizona managed to reach the eastern San Diego County deserts and the southern Coachella Valley after 1 AM bringing a wind shift to the east and southeast...gusts mostly less than 20 mph...and an increase in surface dewpoints into the lower to mid 60s. This surge...such as it is...is quite shallow and limited and expected to have little or no impact on convection this afternoon.

A weak low pressure system off the Southern California coast will move inland on Monday bringing drying of the mid level monsoonal moisture with drier flow aloft prevailing into next weekend. High temperatures into next weekend will be mostly near to slightly below average. Weak onshore flow and the marine layer will bring areas of night and morning low clouds and patchy fog...extending locally into the western valleys at times. The onshore flow will also bring gusty southwest to west winds to the mountains and deserts each afternoon and evening.

**Fig. A-29:** An Area Forecast Discussion forecasted that outflow boundaries were moving through the region, bringing gusty winds to southeastern California. Source: Iowa Environmental Mesonet;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201608211027>.

**FIGURE A-30**  
**BLOWING DUST ALERT FOR PORTIONS OF YUMA COUNTY**

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE PHOENIX AZ  
121 PM MST SUN AUG 21 2016  
AZZ025-026-212300-  
/O.NEW.KPSR.DU.Y.0041.160821T2021Z-160821T2300Z/  
YUMA/MARTINEZ LAKE AND VICINITY-SOUTHWEST DESERTS-  
INCLUDING THE CITIES OF...FORTUNA FOOTHILLS...SAN LUIS...  
SOMERTON...YUMA...DATELAND...TACNA...WELLTON  
121 PM MST SUN AUG 21 2016  
...BLOWING DUST ADVISORY IN EFFECT UNTIL 4 PM MST THIS  
AFTERNOON...  
THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A BLOWING DUST  
ADVISORY...WHICH IS IN EFFECT UNTIL 4 PM MST THIS AFTERNOON.  
\* AFFECTED AREA...YUMA COUNTY  
\* TIMING...THROUGH 4 PM MST  
\* WINDS...WINDS IN EXCESS OF 40 MPH  
\* VISIBILITY...LESS THAN 1 MILE  
\* IMPACTS...LOW VISIBILITIES AND STRONG GUSTY WINDS COULD CREATE  
VERY HAZARDOUS DRIVING CONDITIONS.  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
BE READY FOR A SUDDEN DROP IN VISIBILITY. IF YOU ENCOUNTER  
BLOWING DUST OR BLOWING SAND ON THE ROADWAY OR SEE IT  
APPROACHING...PULL OFF THE ROAD AS FAR AS POSSIBLE AND PUT YOUR  
VEHICLE IN PARK. TURN THE LIGHTS ALL THE WAY OFF AND KEEP YOUR  
FOOT OFF THE BRAKE PEDAL.  
REMEMBER...PULL ASIDE...STAY ALIVE.

**Fig. A-30:** Although issued after the peak concentrations at El Centro, this Dust Advisory supports that there was dust being lofted by gusty winds in the area. Source: Iowa Environmental Mesonet;  
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWPSR&e=201608212021>.

**FIGURE A-31**  
**BLOWING DUST OVER SOUTHEASTERN CALIFORNIA**

Saturday, August 20, 2016

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE  
IMAGERY

THROUGH 0200Z August 21, 2016

**DUST:**

Arizona:

A northwest to southeast oriented outflow boundary produced from convection in Arizona was moving towards the southwest in central Arizona. Blowing dust and sand resulted along this outflow boundary which spanned from the west-central border of Arizona to southeastern Arizona.

**Fig. A-31:** Although the wind-dust event occurred during night hours making visual identification impossible, blowing dust over portions of Arizona were identified late on August 20. Source: <http://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2016/2016H210250.html>.



**FIGURE A-32  
AIR QUALITY INDEX**

<b>Air Quality Index Levels of Health Concern</b>	<b>Numerical Value</b>	<b>Meaning</b>
<b>Good</b>	<b>0 to 50</b>	<b>Air quality is considered satisfactory, and air pollution poses little or no risk.</b>
<b>Moderate</b>	<b>51 to 100</b>	<b>Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.</b>
<b>Unhealthy for Sensitive Groups</b>	<b>101 to 150</b>	<b>Members of sensitive groups may experience health effects. The general public is not likely to be affected.</b>
<b>Unhealthy</b>	<b>151 to 200</b>	<b>Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.</b>
<b>Very Unhealthy</b>	<b>201 to 300</b>	<b>Health alert: everyone may experience more serious health effects.</b>
<b>Hazardous</b>	<b>301 to 500</b>	<b>Health warnings of emergency conditions. The entire population is more likely to be affected.</b>

**Fig. A-32:** The Air Quality Index The AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The AQI focuses on health effects you may experience within a few hours or days after breathing polluted air. EPA calculates the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. Ground-level ozone and airborne particles are the two pollutants that pose the greatest threat to human health in this country. Source: <https://airnow.gov/index.cfm?action=aqibasics.aqi>.

**FIGURE A-33**  
**IMPERIAL COUNTY ISSUED LIMITED**

Imperial County Air Pollution Control District  
Daily Weather and Ag. Burning Information

Date: Friday August 19 2016

Yesterday's Weather Observations at Imperial Airport (ASOS) FAA/NWS

LOCAL TIME	TEMP °F	WINDS MILES PER HOUR	VISIBILITY MILES
7 AM	90	SE 12	10
8 AM	91	S 10	10
9 AM	97	SE 10	10
10 AM	100	SSE 12	10
11 AM	102	SE 13	10
NOON	104	SE 13 G18	10
1 PM	106	SSE 15	10
2 PM	108	SE 13	10
3 PM	108	WSW 6	10
4 PM	108	ENE 5	10
5 PM	108	SE 10	10
6 PM	108	SE 13	10
7 PM	102	SSW 9	10

Max. Temperature yesterday was 108 degrees

Today's Mt. Signal Visibility at 7:30 AM YES NKX 12Z 500 MB Height \_\_\_\_\_  
1Y7 12Z 500 MB Height \_\_\_\_\_

**Forecasts**  
**High Today** 107

	Local Forecast (Issued 8 AM Local)	Computer Forecast (RUC 40KM 12Z)
Est. Time Mixing Height reaches 3000 feet		<u>10:00</u>
Forecast of Maximum Mixing Height		<u>12,500</u> feet
Forecast for Morning surface winds	<u>SSE 5</u> mph	<u>SSE 5</u> mph
Forecast for afternoon surface winds	<u>SSE 5</u> mph	<u>SSE 5</u> mph
Forecast for evening surface winds	<u>SW 5</u> mph	
Forecast 10 AM - 3 PM transport winds	<u>WNW 5</u> mph	

Comments/Complaints: MARGINAL GREEN WASTE

---

Burn Hours 12-3 ARB No Burn Day \_\_\_\_\_ District called No Burn Day 12-3

Total actually burned today \_\_\_\_\_ acres Crops burned \_\_\_\_\_

IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT 2011 Int mc

**Fig. A-33:** A copy of the conditions as they existed on August 19, 2016. The ICAPCD declared a Limited Burn Day. Source: ICAPCD Archives.

**FIGURE A-34**  
**IMPERIAL COUNTY ISSUED LIMITED**

Imperial County Air Pollution Control District  
Daily Weather and Ag. Burning Information

Date: Saturday August 20 2016

Yesterday's Weather Observations at Imperial Airport (ASOS) FAA/NWS

LOCAL TIME	TEMP °F	WINDS MILES PER HOUR	VISIBILITY MILES
7 AM	86	CALM	10
8 AM	90	NE 9	10
9 AM	93	E 7	10
10 AM	97	S 7	10
11 AM	100	S 7	10
NOON	104	SE 8	10
1 PM	106	ESE 9	10
2 PM	106	SSE 8	10
3 PM	108	ENE 6	10
4 PM	108	N/A	10
5 PM	108	E 7	10
6 PM	106	S 21 G31	6
7 PM	91	SSW 18	6

Max. Temperature yesterday was 108 degrees

Today's Mt. Signal Visibility at 7:30 AM YES NKX 12Z 500 MB Height \_\_\_\_\_  
1Y7 12Z 500 MB Height \_\_\_\_\_

**Forecasts**

**High Today** 107

	Local Forecast (Issued 8 AM Local)	Computer Forecast (RUC 40KM 12Z)
Est. Time Mixing Height reaches 3000 feet	_____	<u>10:00</u>
Forecast of Maximum Mixing Height	_____ feet	<u>12,000</u> feet
Forecast for Morning surface winds	<u>S 5-10</u> mph	<u>S 5-10</u> mph
Forecast for afternoon surface winds	<u>S 5-10</u> mph	<u>S 5-10</u> mph
Forecast for evening surface winds	<u>SW 5-10</u> mph	
Forecast 10 AM - 3 PM transport winds	<u>SE 5</u> mph	

Comments/Complaints: MARGINAL GREEN WASTE

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Burn Hours 12-3 ARB No Burn Day \_\_\_\_\_ District called No Burn Day \_\_\_\_\_  
Total actually burned today \_\_\_\_\_ acres Crops burned \_\_\_\_\_

IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT 2011 Int MC

**Fig A-34:** A copy of the conditions as they existed on August 19, 2016. The ICAPCD declared a Limited Burn Day. Source: ICAPCD Archives

**FIGURE A-35**  
**IMPERIAL COUNTY APCD ISSUES NO BURN DAY**

Imperial County Air Pollution Control District  
Daily Weather and Ag. Burning Information

Date: Sunday August 21 2016

Yesterday's Weather Observations at Imperial Airport (ASOS) FAA/NWS

LOCAL TIME	TEMP °F	WINDS MILES PER HOUR	VISIBILITY MILES
7 AM	84	SE 7	10
8 AM	86	SSE 8	10
9 AM	90	SSW 3	10
10 AM	93	CALM	10
11 AM	97	CALM	10
NOON	100	N 3	10
1 PM	102	NNW 6	10
2 PM	106	NNW 5	10
3 PM	108	CALM	10
4 PM	106	WNW 6	10
5 PM	108	WNW 6	10
6 PM	108	WSW 7	10
7 PM	106	CALM	10

Max. Temperature yesterday was 108 degrees

Today's Mt. Signal Visibility at 7:30 AM YEA NKX 12Z 500 MB Height \_\_\_\_\_  
1Y7 12Z 500 MB Height \_\_\_\_\_

**Forecasts**  
**High Today** 106

Local Forecast (Issued 8 AM Local)	Computer Forecast (RUC 40KM 12Z)
	<b>10:00</b>
Est. Time Mixing Height reaches 3000 feet	_____ feet
Forecast of Maximum Mixing Height	_____ feet
Forecast for Morning surface winds	<u>S 5-10</u> mph
Forecast for afternoon surface winds	<u>S 5-10</u> mph
Forecast for evening surface winds	<u>SW 5-10</u> mph
Forecast 10 AM - 3 PM transport winds	<u>SSE 5-10</u> mph

Comments/Complaints: \_\_\_\_\_

Burn Hours \_\_\_\_\_ ARB No Burn Day \_\_\_\_\_ District called No Burn Day YES

Total actually burned today \_\_\_\_\_ acres Crops burned \_\_\_\_\_

IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT 2011 Int MC

**Fig. A-35:** A copy of the Imperial County Air Pollution Control District official record of the conditions as they existed on August 21, 2016. A No Burn Day was declared. Source: ICAPCD Archives



**FIGURE A-36**  
**IMPERIAL COUNTY AFFIDAVIT 30 DAY PUBLIC NOTICE**

**AFFIDAVIT OF PUBLICATION**  
**(2015.5 C.C.P.)**

**STATE OF CALIFORNIA**

**County of Imperial**

I am a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk\* of the printer of the


**Imperial Valley Press**

a newspaper of general circulation, printed and published daily in the City of El Centro, County of Imperial and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Imperial, State of California, under the date of October 9, 1951, Case Number 26775; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

08/17.

all in the year 2018

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

  
 \_\_\_\_\_  
 SIGNATURE

Name of Account: I C AIR POLLUTION CONTROL  
 Order Number: 11205953  
 Ad Number: 31436487

\* Printer, Foreman of the Printer, or Principal Clerk of the Printer  
 Date: 17 th day of August, 2018.  
 at El Centro, California.

This space is for the County Clerk's Filing Stamp:

**RECEIVED**

**AUG 22 2018**

**AIR POLLUTION  
 CONTROL DISTRICT**

**NOTICE OF AVAILABILITY  
 OF THE DEMONSTRATION OF THE OCCURRENCE  
 OF FOUR EXCEPTIONAL EVENTS (EE)**

The Imperial County Air Pollution Control District (Air District) has prepared four Draft Exceptional Event (EE) Demonstrations, which support the requested exclusion of measured 24-hour concentrations at the Air District air monitoring sites. Listed below by date, site and concentration as measured by a continuous Federal Equivalent Method monitor (FEM) are the four Draft EE's.

August 19, 2016 and August 21, 2016  
 Brawley -156 µg/m3 and Westmorland -164 µg/m3  
 El Centro - 170 µg/m3

September 19, 2016  
 Westmorland -177 µg/m3

October 30, 2016  
 Brawley -162 µg/m3

December 16, 2016  
 Brawley -845 µg/m3 and Calexico -238 µg/m3  
 El Centro -207 µg/m3 and Niland -530 µg/m3  
 Westmorland -733 µg/m3

The public and all interested parties are encouraged to review and comment on the four Draft EE's listed above. These demonstrations provide the supporting evidence that on the days indicated for 2016 Air District air monitors were affected by transported elevated levels of particulate matter of an aerodynamic size less than 10 microns (PM10). Winds, associated with a weather events suspended and transported PM10 into the region affecting areas within San Diego, Riverside, Yuma and Imperial counties. The four Draft EE's provide the scientific justification for the requested exclusions. The Air District is soliciting and accepting comments for 30 days commencing the date of the publication of this notice. The final closing date for submitting comments is September 17, 2018 by close of business.

The four Draft EE's for days listed above are available for download at the Air District website at [www.co.imperial.ca.us](http://www.co.imperial.ca.us), under "Air Pollution". To view a hard copy of any of the four Draft EE's, please visit the Air Pollution Control District office at 150 S. 9th Street, El Centro. Should you have any questions or concerns please feel free to call our office between 8am and 5pm at (442) 255-1800 and ask for Monica N. Soucier.

L273

Au17

**Fig A-36:** A copy of the Imperial County Air Pollution Control District official record (affidavit) affirming the publication of the notice of availability of the Exceptional Event Demonstration for August 19, 2016 and August 21, 2016. The date for closing comments was September 17, 2018

**FIGURE A-37  
IMPERIAL COUNTY  
COMMENTS REGARDING THE  
AUGUST 19, 2016 AND AUGUST 21, 2016 EE DEMONSTRATION**

The ICAPCD did not receive any comments